Name: _____

Period: _____ Table: _____

/ 20

General Chemistry
1.3 Chromatography
Lab

CHROMATOGRAPHY LAB

I Think of an Idea

Can Paper Chromatography be used to separate ink into its colors?

II Research your Topic

Chromatography is the physical separation of a mixture into its individual components. We can use chromatography to separate the components of inks and dyes. The process can also be used to separate the colored pigments in plants or used to determine the chemical composition of many substances.

III Hypothesis

If we test six (6) black inks with paper Chromatography, ***then*** we will be able to match the inks to the Mystery Marks.

IV Plan Your Experiment

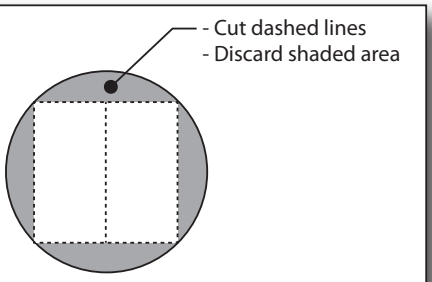


Figure 1.3A
Cutting Filter Paper

Procedure: (Read *BEFORE* you begin Experiment)

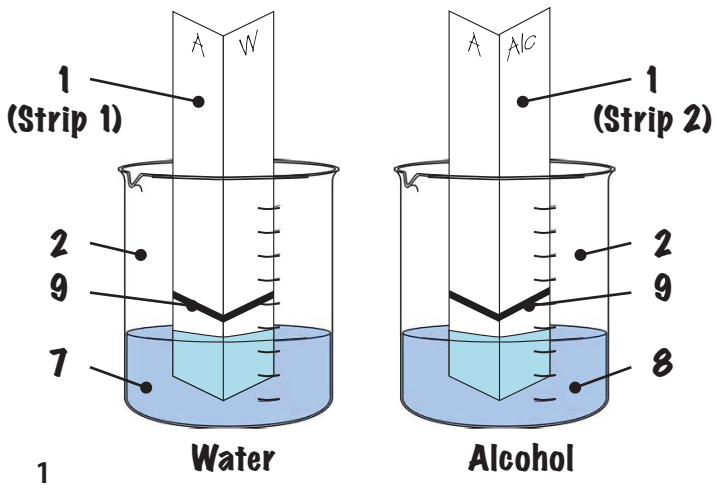
At each station:

1. Cut Filter Paper as shown in Figure 1.3A to create 2 strips.
2. In ***PENCIL***, draw a line 1 cm from bottom of each strip.
3. In ***PENCIL***, write the station letter at the top of each strip.
4. In ***PENCIL***, write "W" for Water at the top of Strip 1, and write "Alc" for Alcohol at the top of Strip 2.
5. With the marker provided, trace a thick line over the pencil line on each strip.
6. Crease each strip down the middle (hot dog style). This will help the strip stand in the beaker.
7. Measure 5 mL of ***water*** using the graduated cylinder and pour into beaker. Identify the beaker.
8. Measure 5 mL of ***alcohol*** using the graduated cylinder and pour into beaker. Identify the beaker.
9. Place Strip 1 into the Water Beaker and Strip 2 into the Alcohol Beaker.
10. Remove the strips when the ink is 2/3's up the filter paper.
11. Store the strips.
12. Go to next station and repeat the procedures.

Equipment List: (per station)

1. One (1) Filter Paper
2. Two (2) 50 mL Beakers
3. One (1) Pencil
4. One (1) pair of scissors
5. Two (2) graduated cylinders
6. Two (2) 100 mL Beakers
7. Water
8. Alcohol
9. One (1) Black Marker

Sketch (per station)



V Run the Experiment

Run the experiment at each station. Record observations in Data Table 1.3A.

Data Table 1.3A [6 points]

Station/ Marker		A	B	C	D	E	F
Colors observed in Chroma-tography	Water						
	Alcohol						

VI Analyze Results

Answer the following questions ***IN COMPLETE SENTENCES***. Include the question in your answer.

1. Did the inks separate the same in the water and in the alcohol ? Why or why not? [2 points]

2. Did all of the inks separate into the same colors? Why or why not? [2 points]

3. Did the colors occur in the same order in all samples? Explain. [2 points]

4. Why do the colors separate from each other at all? [2 popints]
   Some reasearch may be needed to answer this question .

VII Conclusion

Compare your strips with the to the Mystery Marks hanging in the room.
Identify your Marker Letter with the Mystery Mark Numbers. [1 point each]

Marker A matches Mystery Mark # _____ **Marker D** matches Mystery Mark # _____

Marker B matches Mystery Mark # _____ **Marker E** matches Mystery Mark # _____

Marker C matches Mystery Mark # _____ **Marker F** matches Mystery Mark # _____